PLURALISM AS A VEHICLE FOR THEORY-BUILDING IN EDUCATIONAL TECHNOLOGY RESEARCH

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ABSTRACT

The chapter addresses the challenges of research into educational technology in the context of higher education and of theory-building in this field afforded by singular research methods and philosophies. Using an exemplar case study, the authors argue for the adoption of pluralism to facilitate deep exploration of complex social phenomena. Pluralism is conceptualized by distinguishing between methodological, analytical, and philosophical pluralism. In addition, arguments for and against pluralism are advanced. The chapter concludes with step-by-step proposals for engaging pluralism in higher education research studies.

Keywords: Methodological pluralism; analytical pluralism; philosophical pluralism; educational technology; higher education; theory-building

INTRODUCTION AND BACKGROUND

Within the fields of higher education and educational technology research, one of the main challenges that scholars and researchers face is the quick turnover of educational technologies in the higher education context (Hannon & Al-Mahmood, 2014). Scholarly inquiry into educational technology often emphasizes the progressive possibilities associated with new technologies with limited attention to appropriate methodologies or theory informing practice (Bennett & Oliver, 2011). Like other forms of educational research, educational technology

research is primarily concerned with practice issues, tends to be centred around "common-sense" assumptions and explanations of the practical application of tools and processes (Bennett & Oliver, 2011), and mainly focuses on the design, implementation and evaluation of technology interventions (Hannon & Al-Mahmood, 2014, p. 745).

Two possible explanations for this state of affairs have been proposed. Czerniewicz (2008, p. 104) argues that in educational technology research, the differentiation between the professional field and the scholarly field is not clearly demarcated as the scholars and the professionals may well be the very same people. While acknowledging the need for professionals to engage with educational technology practice and application, this chapter suggests that theory having an "uncertain presence" and playing "a contested role" (Hannon & Al-Mahmood, 2014, p. 745) is a limitation in educational technology research, requiring deeper scholarly engagement.

Second, Clegg (2012, p. 408) argues that "theory is troubling" and points out that "the turn to 'theory' can also be read as signalling legitimization problems in higher educational research, mirroring the problems that have beset educational research more widely." As a young field of study, educational technology research can also be regarded as suffering from a "theory deficit" (Clegg 2010, p. 408; Drysdale, Graham, Spring, & Halverson, 2013), a lacuna that this chapter aims to address.

Scholarly literature identifies a number of trends in the field of educational technology research. Currently the field is characterized by:

- A strong focus on evidence-based approaches where emphasis is placed on "what works." Derived from the medical model, this approach intends to seek understanding of success factors without appropriately considering the changing and multifaceted contexts in which educational technologies function (Hannon & Al-Mahmood, 2014, p. 745; Baydas, Kucuk, Yilmaz, Aydemir, & Goktas, 2015).
- An increasing focus on data analytics and big data that further precipitates a movement away from theory (Daniel, 2015).
- The strong influence of instructional design that has traditionally adopted a positivist paradigm with limited evidence of theory building associated with such methodological approaches (Halverson, Graham, Spring, Drysdale, & Henrie, 2014).
- Design-based research that places emphasis on the design aspects of educational technology and is strongly aligned with a more evidence-based approach to research (Bennett & Oliver, 2011; Hannon & Al-Mahmood, 2014).

From a methodological perspective, the field of educational technology research was initially dominated by experimental methods, but recently an increase in qualitative as well as mixed method methodologies (Baydas et al., 2015) has become apparent. A preference for quantitative studies may have been influenced by the need to test hypotheses associated with new or emerging

technologies. Such studies also provide opportunity for generalizability and further application in the field. In terms of non-experimental studies, a steady increase in descriptive, survey and correlational studies is apparent.

As far as qualitative approaches to educational technology research are concerned, it seems as if the case study is the most popular method (Baydas et al., 2015). The use of mixed methodologies in educational technology research still remains significantly lower than the adoption of purely quantitative or qualitative approaches. Various reasons could contribute to the reluctance to engage with mixed methods in the field. This could include the complexity associated with such studies and their time-consuming nature (Baydas et al., 2015). Seeing that the field of educational technology research is often characterized by a lack of integration of theory and praxis, the employment of mixed methodologies could be of benefit (Barnat, Bosse, & Trautwein, 2017; Baydas et al., 2015). Plowright (2011, p. 184) explains the advantages of "holistic integrationism," afforded by the use of mixed methods, as liberating researchers from narrow "QUAN/QUAL" polarization, in providing a framework "that can be used to structure thinking and activities to achieve warrantable research that holistically integrates all stages of the research process" (Plowright, 2011, p. 189).

Research published in the last decade often consisted of "uncritical or oversimplified accounts of technology" (Hannon & Al-Mahmood, 2014, p. 745). From reviews of the literature, it is clear that scholars in educational research tend to prefer elementary forms of descriptive research with little evidence of complex quantitative methodologies. The field is often criticized for its weakness in terms of "methodological abilities, aptitude and ambition" (Bulfin, Henderson, Johnson, & Selwyn, 2014, p. 214). The assumption is that educational technology research fails to deliver on rigorous and methodical research. This is evident in many research papers underplaying or sharing little evidence of methods and research design, preferring descriptive methodologies and scantily drawing on rigorous scientific design and analysis (Bulfin et al., 2014). Yet, the real problem could rather be what Clegg (2012, p. 408) describes as data appearing to be not "containable in previously existing theoretical repertoires."

These challenges in the field call not only for stronger methodological rigor and empirical interrogation (Bulfin et al., 2014), but also for a more inclusive approach as far as research methods and paradigms are concerned, in order to produce scholarly work that could contribute to theory development in the field. This chapter argues that a pluralist approach could be useful in this regard.

CONCEPTUALIZATION OF PLURALISM

Different forms of pluralism can be distinguished. The most well-known and widely applied form of pluralism is methodological pluralism that goes hand in hand with analytical pluralism. Less-widely accepted is philosophical pluralism referring to the adoption of multiple paradigms by a researcher or team of researchers. This chapter covers all three forms of pluralism.

Traditionally, pluralistic approaches in research have been frowned upon. Several authors (Johnson & Onwuegbuzie, 2004; Knox, 2004; Mingers, 2001)

have written about the so-called "paradigm wars" between quantitative and qualitative purists:

> Both sets of purists view their paradigms as the ideal for research, and, implicitly if not explicitly, they advocate the *incompatibility thesis* […] which posits that qualitative and quantitative research paradigms, including their associated methods, cannot and should not be mixed. (Johnson & Onwuegbuzie, 2004, p. 14)

More recently, there has been an acknowledgment that the complexity of issues that social science researchers investigate requires a more flexible approach to the choice of research methods, and mixed-methods research has been proposed as a "third research paradigm in educational research" (Johnson & Onwuegbuzie, 2004, p. 14). The same authors go on to say:

> We contend that epistemological and methodological pluralism should be promoted in educational research so that researchers are informed about epistemological and methodological possibilities and, ultimately, so that we are able to conduct more effective research. Today's research world is becoming increasingly inter-disciplinary, complex, and dynamic; therefore, many researchers need to complement one method with another, and all researchers need a solid understanding of multiple methods used by other scholars to facilitate communication, to promote collaboration, and to provide superior research.

Methodological pluralism is most often typified as mixed-methods research, comprising the collection and analysis of both quantitative and qualitative data. Traditionally, the collection and analysis of quantitative data have been associated with a positivist paradigm, whereas an interpretivist paradigm has been regarded as the most suitable for the analysis of qualitative data. However, the complexity of the problems and issues investigated by social science researchers has led to research approaches moving beyond the traditional and conventional (Mohamedunni, 2014; Plowright, 2011). Barnat et al. (2017, p. 3) argue that this is particularly true for educational research: "Investigating teaching and learning embedded in their institutional and social structures may involve research problems that exceed the explanatory power of single methods." Pluralism in all its significances, however, transcends mixed-method research which is usually conducted in a pragmatist paradigm (Plowright, 2011).

May, Hunter, and Jason (2017, p. 2) distinguish a pluralism "hierarchy" that includes the following levels: the first level would be a pluralistic study or a mixed-methods study, involving the collection and analysis of both quantitative and qualitative data. On the next level, a research program can reflect pluralism when it is conducted by a team of researchers on a single topic. Finally, they distinguish "pluralistic research disciplines […] in which a balance of study designs and analysis techniques is used in publications" (p. 2). According to this, higher education research could probably qualify as a pluralistic research discipline. This hierarchy mainly focuses on the inclusion of multiple methods, techniques, people, designs and forms of analysis in a research project or program, and demonstrates an acknowledgment that there is value in a variety of sources of information, that no research method is inherently superior to any other and that different forms of information require different methods of analysis (May et al., 2017, p. 1).

Those supporting analytical pluralism are of the opinion that diverse forms of knowledge can be generated by using a variety of methods of analysis. Such analytical methods should then be regarded as complementary rather than exclusive of one another. Adopting multiple analytical approaches offers scholars a selection of instruments that could interrogate different aspects of the phenomenon under investigation, and possibly provide opportunity for a multidimensional interpretation and appreciation of the phenomenon (Clarke et al., 2015).

A different conceptualization of pluralism is proposed by Mingers (2001), who argues for a pluralist methodology for information systems research. He identifies "loose pluralism," when a discipline supports and encourages the use of a variety of research methods and paradigms, but does not prescribe how or when they should be used. Secondly, Mingers (2001, p. 243) identifies "complementarism":

> where different paradigms are viewed as internally consistent, and based on different assumptions about their context of use, such that each paradigm would be seen as more or less appropriate for a particular research situation.

Lastly, "strong pluralism" acknowledges that all research situations are inherently complex and multidimensional, and a range of research methods is therefore required (Mingers, 2001, p. 243). Like Clarke et al. (2015) and Plowright (2011), Mingers (2001, p. 243) also espouses the importance of multimethod research to "deal effectively with the full richness of the real world," and then relates this to different paradigms that "each focus attention on different aspects." Mingers's conceptualization of pluralism hence extends beyond a limited focus on the use of multiple methods of data collection and analysis to include the accommodation of multiple paradigms in a single research situation. This suggests that the consideration of methodological and analytical pluralism requires an acknowledgment of the close relationship between research methodology and research paradigms.

Brief reference to "paradigm wars" has already been made. In this respect, we support Mingers's (2001, p. 243) point of view that "arguments about paradigm incommensurability have been overstated." For the purpose of this discussion we define a paradigm as a construct that includes a set of philosophical assumptions on ontology, epistemology, axiology and methodology. Although alignment or congruence between these philosophical assumptions is important for the credibility and rigour of the research, rigid linkages between particular paradigms and research methods are not sacrosanct (Johnson & Onwuegbuzie, 2004). Knox (2004) highlights the danger of researchers and students "removing" themselves from theory because the paradigm associated with the research method/s used is not suitable for answering the research question or for interpreting the data, and emphasizes the point that methods are dependent on the research questions and not on the philosophical stance of the researcher (see also Plowright, 2011). Knox (2004, p. 124) goes on to argue that:

> At best the concept of philosophical pluralism and methodological pluralism is trying to identify that a method does not select a theory but that there is an elective affinity between a theory and a method.

Awareness of the "elective affinity" assists the researcher in contemplating which of the myriad of research methods, techniques or tools would be most appropriate for answering the research question while being fully aware of her/his own ontological views. Even though an elective affinity between theory and methods exists, this is not a fundamental law (Knox, 2004, p. 124). This approach opens up the possibilities for pluralism in higher education research, more specifically educational technology research, as will be illustrated in the following exemplar.

AN EXEMPLAR STUDY: INSTITUTIONAL AND AGENTIC INTERPLAY IN TECHNOLOGY-ENHANCED HIGHER EDUCATION CURRICULUM DEVELOPMENT

To demonstrate the use of pluralist approaches in educational technology research, we examine a recently completed PhD study (Strydom, 2018) conducted in the context of technology integration into the higher education curriculum. Against the background of the growing prominence of educational technology in both higher education practice and theory, the study aimed to explore the integration of three interrelated fields: educational technology, curriculum development, and academic development within the higher education context. It was argued that due to the multifaceted nature of the three intersecting fields, multiple perspectives had to be accommodated when considering the interplay between structural and agentic factors. The aim of the research was to uncover the unobservable mechanisms and practices at play that influence technology integration in the curriculum. In order to fulfil this aim the study was guided by four sub-questions, namely:

(1) What are the factors at play when academics decide to engage or not to engage with educational technologies in the curriculum?
(2) What abstract or contextual knowledge fields of academics are foregrounded in the process of technology-enhanced curriculum development?
(3) What are the approaches that could serve as normative framework to support and care for academic developers involved in the process of technology-enhanced curriculum development?
(4) What are the knowledge practices that academic developers are valorizing in terms of their role in technology-enhanced curriculum development in faculties?

The multifaceted nature of the research questions prompted the researcher to consider various theoretical and methodological options, and to probe the areas of difference and compatibility from both an ontological and epistemological perspective. A first step was to determine the main paradigms that could potentially influence the study (see Table 1).

The critical-realist school of thought considers the strengths of positivism and postmodernism and discards the weaknesses of both paradigms (Musto & Rodney, 2016).

Table 1. Overview of Main Paradigms Influencing the Inquiry (Strydom, 2018, pp. 79−80).

Research Paradigm	Examples of Schools of Thought	Ontological Views
Positivism (also called empiricism)		• closed systems of social world; • cause and effect relations; and • objective observations.
Postmodernism (also called interpretivism, idealism)	• interpretivism; • constructionism; and • phenomenology.	• social world constructed by agents; • emphasis on meaning making; • "strong" constructionism: query aspects of social reality, truth, and objectivity; and • "weaker" constructionism: acknowledge elements of objective social reality; only parts of the world are socially constructed.
Realism (also called post-positivism, critical realism)	• direct realism; and • critical realism.	• social world an "open system;" • world exists mainly independent from knowledge; • social science should be critical of social world (plain realism only exists in natural sciences); • social world is complex and influenced by interrelated causes; and • considers observables and unobservables in social world.

Sources: Adapted from Dobson (2003); Fopp (2008); Mohamedunni (2014); Ormston, Spencer, Barnard, and Snape (2003); and Sousa (2010).

From an epistemological perspective, realists argue that understanding the social world does not necessarily influence the world itself (Ashwin, 2012), but that the world is largely "mind-independent" and that all entities relating to such a world are independent in relation to knowledge and the world itself (Sousa, 2010). All theoretical frameworks that attempt to identify the different constructs of the social world should therefore be considered in an inquiry (Ashwin, 2012). These contestations aligned with the second and fourth sub-questions where the meaning making of academics of the notion of technology-enhanced curriculum development was uncovered. It also assisted in the exploration of knowledge practices valorized by academic developers involved in technology-enhanced curriculum practices. Critical realism, therefore, shares with positivism the acknowledgment of the scientific method with specific reference to data collection and data interpretation (Saunders & Briston, 2009).

What is evident is that critical realism does, in certain respects, share commonalities with postmodernism. This guided the researcher in the consideration of postmodernism for addressing the first and third sub-questions in the inquiry. Yet, clear ontological differences between critical realism and postmodernism had to be acknowledged. For instance, critical realists argue for a depth ontology which reflects the domains of the real, the actual and the empirical. Such a view claims that reality is more than just the empirical or the actual. However,

from an ontological perspective, postmodernists suggest that reality is experienced by the actual and empirical without recognizing a reality that is evident independently of agents or their perceptions (Dobson, 2003). Regardless of these divergent ontological perspectives, it is argued that there are levels of congruence between the two paradigms.

Both critical realism and postmodernism acknowledge the dependent nature of knowledge and that observation remains value-laden. Both paradigms also broadly underline the social construction of reality. In addition, proponents of critical realism concur with "weaker" constructionist claims that posit that knowledge is socially constructed (Dobson, 2003). "Strong" constructionism clearly queries aspects of social reality whilst "weaker" social constructionism acknowledges such a social reality and does not discard it completely (Fopp, 2008). Critical realists also agree with postmodernist views that knowledge is created socially and historically. For instance, critical realists recognize the merit of phenomenology and meaning making as central tenets of social reality (Dobson, 2003). Another aspect of compatibility that was identified is that both social constructionists and critical realists recognize the prospect of objectivity (i.e., the real world), although their positions regarding this assumption do differ. For example, "weaker" social constructionists argue that access to such a world is guided by culture, discourse and language. Although critical realists also recognize the real world, they emphasize the importance of mediation to this world through science and theory (Fopp, 2008).

The possibility of compatibility between the two paradigms in terms of data gathering and analysis also had to be determined. The two paradigms share a common purpose, namely to make meaning of the research phenomenon. The focus of this meaning making, however, differs. Whereas postmodernists aim to understand through conceptions of individuals, critical realists move beyond such a focus to place emphasis on wider structures within the research setting (Dobson, 2003). In addition, critical realists, like postmodernists, are in agreement about the impact of the social and historical milieu on knowledge creation and that the subjective processes of meaning making occur in a social context (Dobson, 1999). The social events that the social world consists of are loaded with value resulting in a double hermeneutics in social science (Sousa, 2010). Critical realists, however, attempt to move beyond such an understanding by accepting that theory development epitomizes a social world though still allowing for the impact and influence of perception (Dobson, 1999).

These insights into the congruence between the dimensions of weak social constructionism within the postmodernist paradigm and critical realism provided the researcher with the opportunity to consider methodological and analytical pluralism in the inquiry. It was therefore decided to adopt a critical realist perspective for sub-questions two and four, and a postmodernist perspective for sub-questions one and three.

To determine the abstract and contextual knowledge fields academics draw on when making meaning of the notion of technology-enhanced curriculum development, the semantics dimension of legitimation code theory (LCT) was employed (Maton, 2014). This analytical framework provided rich insight into

the manner in which academics representing different faculties understand the notion of technology-enhanced curriculum development. Similarly, LCT was used to answer the fourth sub-question. By utilizing the specialization dimension of LCT (Maton, 2014), knowledge and knower codes employed by academic developers involved in the support of technology-enhanced curriculum development were foregrounded. Both these theoretical and methodological choices were considered appropriate due to the complexities associated with uncovering knowledge in its own right and in attempting to address "knowledge-blindness" often evident in social science research (Howard & Maton, 2011; Maton, 2013; Maton, 2014).

In terms of sub-questions one and three, it could be argued that a critical realist perspective would have been appropriate to uncover hidden powers and an understanding of what is not explicitly observable (Sayer, 2000). A depth ontology that provides the researcher with the opportunity to explore beyond the surface and to examine the social, institutional, and/or disciplinary circumstances (Clarence, 2013) has merit when making reference to these sub-questions. However, since the emphasis is on the specific experiences of individuals (in this case academics and academic developers), an argument was made to consider a postmodernist perspective which uncovers an "insider perspective" in more depth. Interpretive phenomenological analysis (IPA) was used as research methodology and analytical tool to understand why academics decide to use or not to use technology in the higher education curriculum. Similarly, IPA was employed to assist in developing a normative ethics of care framework for academic developers involved in the support of technology-enhanced curriculum development.

The nature of the four sub-questions, therefore, prompted the researcher to consider a pluralist approach in terms of methodological and analytical choices (see Table 2).

This exemplar illustrates the importance of critically engaging with the ontological and epistemological assumptions of various paradigms and approaches when considering the adoption of a pluralist approach in research. Awareness should be raised in terms of both compatibilities and differences in an attempt to address some of the many debates around pluralism in research.

DEBATES AROUND PLURALISM IN RESEARCH

Complexity of Research Questions Mitigates against Monism

Issues and debates about the consideration of pluralism are evident in the social science research literature. It is suggested, for example, that pluralism provides a platform for understanding the multifaceted nature of complex research questions by not attempting to "cover all bases and so to uncover an objective reality," but instead to place emphasis on "different vantage points [that] help us to avoid one-sided reductionism" (Frost, 2011, p. 129). Due to the growing complexities faced by mankind and the social world, it is expected of social science researchers to continuously adapt and explore a variety of suitable methodologies to examine the social world and its populations. It is

Table 2. Methodological and Analytical Overview of Sub-questions.

Overarching Research Question: What Are the Institutional (Structural) and Agentic Factors Shaping Technology-enhanced Curriculum Development in Higher Education?

Sub-questions	Methodology	Data Analysis
Sub-question 1 What are the factors at play when academics decide to engage or not to engage with educational technologies in the curriculum?	Interpretive phenomenological analysis	Interpretive phenomenological analysis
Sub-question 2 What abstract or contextual knowledge fields of academics are foregrounded in the process of technology-enhanced curriculum development?	Legitimation Code Theory	LCT dimension of semantics
Sub-question 3 What are the approaches that could serve as normative framework to support and care for academic developers involved in the process of technology-enhanced curriculum development?	Interpretive phenomenological analysis	Interpretive phenomenological analysis
Sub-question 4 What are the knowledge practices that academic developers are valorizing in terms of their role in technology-enhanced curriculum development in faculty?	Legitimation Code Theory	LCT dimension of specialization

through a pluralist approach that methodological tribalism and scientific monism that proposes a single account of the social world, is contested (Frost, 2011; Mohamedunni, 2014).

Ethically, pluralist approaches have the potential of avoiding some of the difficulties linked to mono-method understandings where other views are often neglected or ignored (Willig, 2011). With a view to avoiding methodological tribalism, Lamont and Swidler (2014, p. 153) posit:

> We moved toward a period of pluralistic coexistence, with an acknowledgement of the benefits of living together under a big tent, one that made room for the simultaneous flourishing of various types of excellence.

With the inclusion of alternatives and different interpretations, the mono-method interpretation loses some of its power and paves the way for alternative interpretations of the data, which minimizes the likeliness that one interpretation will be elevated and another excluded (Willig, 2011). By attempting to include different interpretations and perspectives, the researcher remains accessible to different viewpoints and conclusions, which are often limited by adopting only one analytical lens (Willig, 2011).

Value of Different Methods

One of the underlying tenets of methodological pluralism is the appreciation that no one method is fundamentally better than another. Such an assumption highlights the recognition and integration of various approaches that could

potentially benefit an inquiry related to a particular phenomenon (Payne, 2006). These methodological choices are assessed in relation to the research questions:

> different methods shine under different lights, and generally have different limitations (e.g. depth versus breadth, singularity versus generalizability, site-based study versus drawing on a wider range of respondents etc.). (Lamont & Swidler, 2014, p. 154)

Each practice is therefore considered in terms of its own strengths and confines. What remains critical is how the researcher approaches and applies such a practice.

A multimethod perspective therefore can address the weaknesses of single method approaches. Findings resulting from a combination of methods could be acknowledged with much more confidence than the results of a singular method (Mohamedunni, 2014). Mingers (2001, p. 244) portrays the shortcomings of adopting a single paradigm and method as follows:

> Adopting a particular paradigm is like viewing the world through a particular instrument such as a telescope, and X-ray machine, or an electron microscope. Each reveals certain aspects, but each is blind to others. Although they may be pointing at the same place, each instrument produces a different, and sometimes seemingly incompatible, representation. Thus, in adopting only one method, one is often gaining only a limited view of a particular research situation.

Combining more than one philosophical framework within a pluralist paradigm could broaden the social science researchers' conception of an object of study by providing various conceptual views that offer a variety of insights and interpretations (Nolas, 2011). Pluralism is thus viewed as suitable for examining human interaction and understanding by preventing a narrow view, which results from the traditional scientific research process. The use of pluralism is better suited for making meaning of abstract and complex social phenomena (Asif, 2013).

Notion of Error

By adopting different lenses through which the social world is conceptualized and understood, the notion of error in research is also addressed. There are numerous factors that contribute to error in social research, for instance, the manner in which reality is conceptualized; the erroneous use of data collection and/or data analysis methods; limited resources to thoroughly investigate an object of study; lack of authentic responses from participants, and so forth (Scott, 2005). Despite attempts to rectify such errors, the risk of fallacy still remains:

> [It suggests that] social [agents] are contingently positioned and, therefore, always observe the world from fixed positions (geographical, cultural and, more importantly, epistemological). There is no outsider perspective that allows the individual access to complete knowledge, including knowledge of how the world works. (Scott, 2005, p. 636)

Different Types of Knowledge and Perspectives

Those supporting analytical pluralism share the viewpoint that different analytical methods employed to one data set could pave the way for the creation of different types of knowledge that could be viewed as corresponding rather than

being mutually restrictive. By using different analytical tools, researchers have the opportunity to interrogate different aspects of the data. Such a process avoids reductionism and potentially offers multifaceted understandings of a particular phenomenon under investigation (Clarke et al., 2015). This results in a process by which the complexities of human nature and the social world can suitably be examined by a number of analytical approaches that signposts the multifaceted nature of human behavior often misrepresented by only one viewpoint or framework. It provides researchers with the opportunity to engage with multiple perspectives in the data, which paves the way for maximizing the interpretative prospects of the phenomenon (Clarke et al., 2015). It also affords the reader the opportunity to decide which parts of the research have meaning for them and what they value. It therefore paves the way for a multi-layered and rich understanding of the object of study by averting the likelihood of reductionism in research (Clarke et al., 2015; Willig, 2011).

Context Awareness

What pluralism also offers social research is an increased appreciation of the context in which research is conducted. Granted, contextual aspects and factors regularly feature as departure points in social research, but it is argued that pluralism encourages a "reconnection with knowledge to the human sources that created it" (Jovchelovitch, 2007 in Nolas, 2011, p. 124). It furthermore suggests an appreciation that these human sources of knowledge offer multiple views of the world which produce manifold and complex contextual contributions (Nolas, 2011).

Reflexivity

Pluralism could assist in the practice of reflexivity by encouraging researchers to place themselves within the context of the research, and to examine their own subjectivity in relation to the research being conducted, as well as the context in which the research takes place. In other words, firstly, own prejudices of the researcher are acknowledged, the reasons for conducting the research are examined, and positionality is recognized. On a second level, pluralism also requires the researcher to be reflexive about her/his choices in combining approaches and the possibilities and challenges such choices imply (Nolas, 2011). For instance, pluralism affords the researcher the opportunity to interrogate the potential epistemological conflicts as a consequence of employing different qualitative approaches. This consideration of the implications of employing often contentious approaches in one research study then leads to the practice of reflexivity (Willig, 2011).

ARGUMENTS AGAINST PLURALISM

Incommensurability of Paradigms

Scholars are often dissuaded from applying mixed method or pluralist approaches because of concerns rooted in debates related to incommensurability

and the fear of disorder. Mingers (2001, pp. 240−241) refers to this stance as an isolationist approach "in which the paradigms are seen as essentially based on mutually exclusive and contradictory assumptions." Frost et al. (2011), however, disagree that incommensurability is a valid apprehension. As mentioned previously, the manner in which participants articulate, narrate and experience a particular phenomenon is not always appropriately encapsulated in one methodology. It therefore requires different approaches to uncover what exactly is communicated by participants.

Literature confirms that the consideration of multiple methods in an inquiry is not uncommon. However, it becomes complex when central philosophical beliefs are linked to different paradigms. It is these beliefs that strengthen the perception that theory or methodology that are aligned with disparate paradigms cannot consistently be considered in one approach (Pozzebon, Mackrell, & Nielsen, 2014). Mingers (2001, p. 243) argues, however, that paradigms are simply "constructs of our thought" and "purely a heuristic device" − hence they are not cast in stone.

Yet scholars still remain hesitant to use pluralism due to their own personal research preferences. Such preferences are not always related to limited skills or knowledge, but also to the researchers' interest in topics, their own philosophical views, and their preferences for methods of examination (Payne, 2006). It is generally accepted that diverse philosophical foundations emphasize dissimilarities in ontological and epistemological viewpoints. Scholars, however, tend to engage with particular parts of literature that resemble and reflect their own interests and philosophical assumptions. If such scholars do not have a comprehensive grasp of different philosophical perspectives, they are likely to struggle to actively engage with the notion of pluralism (Payne, 2006).

Anarchism

One of the well-known objections to pluralism is the preconception of anarchism when employing different approaches or methodologies. Caldwell (1988) is of the opinion that such preconceptions are the result of a misinterpretation of science, of the role of the researcher in the scientific process, and of the notion of pluralism. It is firstly argued that there are already a number of restrictions on the way in which the researcher engages with science. One of these is what Caldwell (1988) calls "dogmatic demarcation" whereby the world and its problems are perceived in a traditional, conservative manner rooted in the traditional tenets of the positivist scientific approach. It is suggested that those that engage with pluralism are aware of a wider range of the often-unobservable norms prominent in scientific communities. Such norms frequently exhibit the ability to limit alternative behavior within the community. Monist approaches select one particular criterion of science to differentiate it from non-scientific practices. Caldwell (1988) argues that such monist approaches misinterpret the role of the researcher in the research process, and propose a clearly demarcated set of principles in scientific traditions. Through such lenses, monism underlines a singular focus on the research process without considering the

abundance and multifaceted nature of theories, and the manner in which they could be engaged with.

Another argument related to anarchism is the assumption that critical reflection and criticism do not feature in pluralism. Yet, it is only by considering the strengths and weaknesses of different approaches that researchers could attempt to make a sound decision about the compatibility of what to include and combine within the research process (Caldwell, 1988).

The fear of disorder or anarchism could also possibly relate to disagreement on the role of the social science researcher and the pluralist view. For example, one of the constraints of any single approach is the customary "usual" way of examining the world. Through pluralism, however, efforts are made to uncover both the strong and the weak points of single research approaches:

> pluralists employ as many [approaches] as they are able to find. Their purpose is not to demarcate, or to find the best theory by comparing rival theories against a set of immutable standards, but to find the strengths and weaknesses of whatever program they are investigating. (Caldwell, 1988, p. 8)

Knowledge of the Researcher

In order to engage with pluralism, it is required of the researcher to demonstrate sufficient knowledge of the main principles of each approach being considered for the research. In addition, the researcher needs to have a good working understanding of the methods of analysis appropriate for the use of such approaches. Conceptually, it is required of the pluralist researcher to show awareness of the different alignments and differences between approaches, and how it could be integrated into a sensible whole (Nolas, 2011).

For instance, in the case of analytical pluralism, researchers could run the risk of employing conflicting or disparate methods of analysis. This calls for an understanding of the underlying theoretical assumptions of methodologies in order to maintain "conceptual clarity" (Clarke et al., 2015, p. 183). This underlines one of the common concerns related to pluralism, namely that competing or divergent paradigms cannot be combined within one study. Researchers are therefore required to critically analyze the ontological, epistemological, and axiological underpinnings of methodologies employed in order to provide coherence to the theoretical clarification and uncovering of a phenomenon (Clarke et al., 2015).

Psychological Factors

Reluctance in exercising pluralism goes beyond the obvious incommensurability and limited knowledge debates to the often-unobservable psychological factors. Scholars simply avoid the use of pluralism since they find it intimidating. It becomes increasingly difficult to convince researchers of alternative approaches if they are trained in and comfortable with the use of one particular paradigm (Midgley, Nicholson, & Brennan, 2017). The literature also deliberates about the impact of specific cognitive partialities which result in preference being given

to one paradigm rather than another. A typical example is that of researchers who are trained in a mathematical field and would usually prefer statistical analysis of research data. On the other hand, those who display inclination toward human interaction and relations will often consider qualitative approaches. If such assumptions are indeed true, it follows that it will be challenging to convince scholars of alternative considerations to their preferred paradigms in a research inquiry (Midgley et al., 2017).

APPLYING PLURALISM IN SOCIAL SCIENCE RESEARCH

Midgley et al. (2017, p. 156) suggest a "model of learning" to deal with the challenges of methodological pluralism in social science research. This model has four stages of cumulative complexity. Following these steps could serve as a "roadmap" for the examination of significant issues and provide the opportunity for the use and validation of a pluralist methodology. Due to the complexity of most higher education inquiries, such suggested steps cannot be viewed as a so-called "operational" framework. We attempt to demonstrate these different considerations with reference to the exemplar case study.

Stage 1: Continuity and Discontinuity

A natural consequence of researchers continuing to develop their methodological expertise is an increase in knowledge and understanding of the various uses of methodology. As can be expected, this growing proficiency will result in the use of different research methods as they are embedded in the methodology. One can therefore argue that pluralist methodologies are associated with development and change, and that they are not fixed nor do they operate on their own (Midgley et al., 2017). Clegg (2012, pp. 415−416), for instance, talks about "the non-linearity and messiness of our intellectual craft." This potential for development implies that other methodologies too can inform practice, representing further progress and growth. These assumptions disprove notions of a "pure" methodology. Pluralist proponents are in agreement that this process of discovery and creation could advance research, particularly when examining real-life challenges. These benefits could be amplified if scholars also commit to the constant and consistent consideration of theoretical implications of pluralist methodologies (Midgley et al., 2017).

These processes of continuous change and development can however lead to tensions among the different features introduced in the course of the research process. The researcher then has the responsibility to stabilize this "fragmentary whole" by balancing consistency with the introduction of original viewpoints (Midgley et al., 2017, p. 156). This process is shown in the exemplar case study where the researcher increased her own knowledge of critical realism and its alignment with LCT. In an attempt to "stabilize the opposing activities" the researcher had to engage with both IPA and LCT methodologically, and with their different prerequisites in order to maintain the continuity of knowledge

creation. The study hence represented an attempt to maintain congruency while introducing a combination of methodologies which differ in terms of theoretical assertions.

Stage 2: Philosophical Reflection

To address the "fragmentary wholeness" of pluralist methodologies asks of the researcher to consider the impact of philosophy. The process of examining the philosophical foundations of methodology will inevitably lead to the interrogation of assumptions regarding such methodologies. Such a practice paves the way for scholars, when designing the research enquiry and considering its methods, to identify how methodologies are positioned in terms of philosophical discourses. As demonstrated in the exemplar case, the first step that the researcher took was exploring the ontological and epistemological claims of the three main paradigms: positivism, postmodernism, and critical realism. In the study, philosophical underpinnings were acknowledged and questioned through the theoretical examination of critical realism and how it relates to postmodernism.

Stage 3: Reflection on Practice

The third stage emphasizes the importance of reflecting on the research process applied. In this reflection process, the following steps could be followed: (1) considering possible ways in which other methodologies could examine a chosen phenomenon; (2) deliberating whether such appraisals are of value; and (3) contemplating the further development of methodology, design, methods and the application thereof (Midgley et al., 2017).

In the exemplar case study, the methodological claims of both critical realism and postmodernism were extensively interrogated. The researcher purposely juxtaposed positivism with critical realism and postmodernism in an attempt to deliberate potential methodological alternatives linked to the research question. As demonstrated, the exemplar case study considered criticisms against methodological pluralism from both ontological and epistemological points of view.

Stage 4: Espoused Methodology and Methodology Use

A final step in this model requires of the researcher to reflect on "espoused theory" and "theory in use" (Midgley et al., 2017, p. 157). The former relates to the purported use of theory and methodology in a study, while the latter epitomizes what was in fact utilized as corroborated by those external to the study. With reference to the exemplar case study, this means that espoused theory embodies the critical realist ontology while those external to the study will discern the impact of postmodernism on the methodological choices. In an attempt to acknowledge the disparity between espoused theory and theory in use, researchers should become critically reflective in highlighting the theoretical perspectives that inadvertently impact them, and the theoretical conjectures that were consciously employed in the inquiry (Midgley et al., 2017). As demonstrated in the

chapter, there was constant awareness of the potential concerns in terms of espoused theory and theory actually utilized.

CONCLUSION

Methodological choices in educational technology research are still dominated by either quantitative or qualitative approaches with mixed methodologies in the minority (Baydas et al., 2015). While acknowledging that higher education studies, as an interdisciplinary field of study, has demonstrated more porous boundaries, we argue that theory-building in this field could benefit from the consideration of alternative and innovative methodological approaches and philosophical underpinnings. Despite criticisms, pluralism has the potential to shed light on the multifaceted nature of educational technology in higher education by providing an opportunity for boundary crossing between different intersecting fields and/or interrelated subjects of study. Pluralism affords the opportunity for a deeper understanding of complex research questions and multiple perspectives on data understanding.

This chapter emanated from an exemplar case study that explored the underlying structural-agentic factors at play in the integration of technology in the higher education curriculum. It became apparent quite early in the research process that investigating this complex social phenomenon would require not only multiple research methods, but also multiple ways of analyzing the data and the adoption of multiple paradigms. During this research journey, the primary researcher was continuously confronted with the shortcomings of a single method of data collection and analysis and a single philosophical framework to uncover the different layers of meaning subsumed in the data in order to shed light on the phenomenon studied; this led to further research on the adoption of pluralism in social science research.

The challenge that remains is how to encourage continuous methodological innovation in order to arrive at an all-encompassing picture of contextual or time-based extents of human action. Such an answer resonates with the willingness of the researcher to fearlessly, yet sensibly, combine different methodologies and methods of analysis to provide a different picture of the phenomenon under investigation. Using the trusted, well-known, traditional approaches rarely leads to innovation and shedding new light on well-researched topics. It is by considering the strengths of different approaches, by attempting to reconcile where compatible and to acknowledge different ontological, epistemological and axiological tensions, that the field can evolve and engage with alternative methodological practices paving the way for a deeper understanding of social phenomena.

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